

CLAIMS

What is claimed is:

1. A liquid crystal device having a first substrate and a second substrate, which are disposed to oppose each other, and liquid crystal enclosed in a gap between the first substrate and the second substrate, comprising:

a first transparent electrode provided on the first substrate;

a first wiring provided on the second substrate; and

a conductive material connecting the first transparent electrode and the first wiring; wherein the first wiring comprises

a metal oxide film and a conductive film having a resistance lower than that of the metal oxide film.

2. The liquid crystal device according to Claim 1, wherein the conductive film is formed on an area other than the portion connecting with the conductive material.

3. The liquid crystal device according to Claim 1, further comprising a driver IC provided on the second substrate for driving the liquid crystal;

wherein the driver IC comprises an output side bump for supplying a signal,

the output side bump is connected to the first wiring, and the conductive film is formed on an area other than the portion connecting with the driver IC.

4. The liquid crystal device according to Claim 1, further comprising a second wiring which is provided on the second substrate and which comprises a metal oxide film and a conductive film having a resistance lower than that of the metal oxide film; and

a driver IC provided on the second substrate for driving the liquid crystal;

wherein the driver IC comprises an input side bump for inputting a signal,

the input side bump is connected to the second wiring, and the conductive film included in the second wiring is formed on an area other than the portion connecting with the driver IC.

5. The liquid crystal device according to Claim 4, further comprising a first protruding area which is provided in the vicinity of one edge of the second substrate and which does not overlap with the first substrate; and

a second protruding area which is provided in the vicinity of another edge, intersecting said one edge, of the second substrate, and which does

not overlap with the first substrate;

wherein the driver IC is provided on the first protruding area, and the second wiring is provided on the first protruding area and on the second protruding area.

6. The liquid crystal device according to Claim 5, further comprising an external circuit substrate connected to the second wiring on the second protruding area;

wherein the conductive film included in the second wiring is formed on an area other than the portion connecting with the external circuit substrate.

7. The liquid crystal device according to Claim 1, further comprising a second transparent electrode provided on the second substrate; and

a driver IC connected to the second transparent electrode.

8. The liquid crystal device according to Claim 7, further comprising a second wiring which is provided on the second substrate, which comprises a metal oxide film and a conductive film having a resistance lower than that of the metal oxide film, and which is connected to the driver IC;

a first protruding area which is provided in the vicinity of one edge of the second substrate and which does not overlap with the first substrate; and

a second protruding area which is provided in the vicinity of another edge, intersecting said one edge, of the second substrate, and which does not overlap with the first substrate;

wherein the driver IC is provided on the first protruding area and comprises an input side bump for inputting a signal from the second wiring, and

the second wiring is provided on the first protruding area and on the second protruding area.

9. The liquid crystal device according to Claim 8, wherein the conductive film included in the second wiring is formed on an area other than the portion connecting with the driver IC.

10. An electronic apparatus comprising a liquid crystal device according to Claim 1.

11. A liquid crystal device having a first substrate and a second substrate, which are disposed to oppose each other, and liquid crystal enclosed in a gap between the first substrate and the second substrate,

comprising:

    a first transparent electrode provided on the first substrate;

    a first wiring provided on the second substrate;

    a conductive material connecting the first transparent electrode and the first wiring;

    a second transparent electrode provided on the second substrate; and

    a second wiring which is provided on the second substrate and which is connected to the second transparent electrode; wherein at least one of the first and the second wirings comprises a metal oxide film and a conductive film having a resistance lower than that of the metal oxide film.

12. The liquid crystal device according to Claim 11, further comprising a driver IC provided on the second substrate for driving the liquid crystal;

    wherein the driver IC comprises an output side bump for supplying a signal, and

    the output side bump is connected to the first or the second wiring.

13. The liquid crystal device according to Claim 11, further comprising:

an external circuit substrate supplying signals to each of the first and the second wirings.

14. A liquid crystal device having a first substrate and a second substrate, which are disposed to oppose each other, and liquid crystal enclosed in a gap between the first substrate and the second substrate, comprising:

a first protruding area which is provided in the vicinity of one edge of the second substrate and which does not overlap with the first substrate;

a second protruding area which is provided in the vicinity of another edge, intersecting said one edge, of the second substrate, and which does not overlap with the first substrate; and

a wiring which is provided on the first protruding area and on the second protruding area;

wherein the wiring comprises a metal oxide film and a conductive film having a resistance lower than that of the metal oxide film.

15. A liquid crystal device having a first substrate and a second substrate, which are disposed to oppose each other, and liquid crystal enclosed in a gap between the first substrate and the second substrate, comprising:

a plurality of first transparent electrodes provided on the first substrate;

a conductive shading film which is provided between the first transparent electrodes adjacent to each other and which is not in electrical contact with the first transparent electrodes; and

a wiring which is provided on the first substrate and which are connected to the first transparent electrodes; wherein the wiring comprises substantially the same layer as that of the first transparent electrodes and substantially the same layer as that of the shading film.

16. A liquid crystal device having a first substrate and a second substrate, which are disposed to oppose each other, and liquid crystal enclosed in a gap between the first substrate and the second substrate, comprising:

a plurality of first transparent electrodes provided on the first substrate;

a conductive shading film which is provided between the first transparent electrodes adjacent to each other and which is not in

electrical contact with the first transparent electrodes;  
a wiring provided on the first substrate;  
a second transparent electrode provided on the second substrate; and  
a conductive material connecting the wiring and the second  
transparent electrode; wherein the wiring comprises substantially the same  
layer as that of the first transparent electrodes and substantially the  
same layer as that of the shading film.

17. A method for manufacturing a liquid crystal device having a  
first substrate and a second substrate, which are disposed to oppose each  
other, and liquid crystal enclosed in a gap between the first substrate and  
the second substrate, comprising:

    a step of providing a first transparent electrode on the first  
    substrate;  
    a step of providing a first wiring on the second substrate; and  
    a step of connecting the first transparent electrode and the first  
    wiring by a conductive material; wherein the first wiring comprises  
    a metal oxide film and a conductive film having a resistance lower  
    than that of the metal oxide film.

18. A method for manufacturing a liquid crystal device having a first substrate and a second substrate, which are disposed to oppose each other, and liquid crystal enclosed in a gap between the first substrate and the second substrate, comprising:

a step of providing a plurality of first transparent electrodes on the first substrate;

a step of providing a conductive shading film between the first transparent electrodes adjacent to each other so as not to be in electrical contact with the first transparent electrodes; and

a step of providing wirings connected to the first transparent electrodes on the first substrate; wherein the wirings are formed so as to comprise substantially the same layer as that of the first transparent electrodes and substantially the same layer as that of the shading film.

19. A method for manufacturing a liquid crystal device having a first substrate and a second substrate, which are disposed to oppose each other, and liquid crystal enclosed in a gap between the first substrate and the second substrate, comprising:

a step of providing a plurality of first transparent electrodes on the first substrate;

a step of providing a conductive shading film between the first transparent electrodes adjacent to each other so as not to be in electrical

contact with the first transparent electrodes; and

a step of connecting a wiring provided on the first substrate and a second transparent electrode provided on the second substrate by a conductive material;

wherein the wiring is formed so as to comprise substantially the same layer as that of the first transparent electrodes and substantially the same layer as that of the shading layer.